

Amendment

Applicant: Christopher J. Zwettler
Serial No.: 10/763,748
Filed: January 23, 2004
Docket No.: 10333US01
Title: SIDE ACTING DRIVE SHAFT ENGAGEMENT FOR A DATA CARTRIDGE

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REMARKS

This Amendment is concurrently filed with the accompanying Request for Continued Examination under 37 C.F.R. §1.114. The Request for Continued Examination follows the Advisory Action mailed September 13, 2006, and the Final Office Action mailed June 30, 2006. Applicant requests Non-Entry of the Amendment and Response under 37 C.F.R. §1.116 filed August 29, 2006.

In the Final Office Action mailed June 30, 2006 claims 1, 2, and 5-22 were rejected. With this Amendment, claims 1, 5, and 12 have been amended. Claims 1, 2, and 5-22 are pending in the application and are presented for reconsideration and allowance.

35 U.S.C. §112 Rejections

Claims 12 and 18-22 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. More specifically, the Final Office Action states that “[t]he originally filed application does not disclose that the drive member is stationary in the second direction prior to interaction with the driven member as recited in claim 12, lines 9-10.” With this Amendment, claim 12 has been amended to clarify its scope. The features recited in amended, independent claim 12 are believed to comply with the written description requirement.

In particular, “[t]he subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement” (*MPEP §2163.02*). Rather, the test for sufficiency of support is whether the disclosure “reasonably conveys” to one of ordinary skill in the art that the inventor had possession of the claimed subject matter at the date of filing (*Id.*)

The disclosure of the originally filed application describes that the motor 106 is mounted to the drive 100 by a spring 107. Spring 107 is mounted to the drive 100 with attachment member 107a and bolts at apertures 108a and 109a, which one of skill in the art would clearly recognize as a non-movable connection, and no other motor or mechanism for otherwise moving motor 106 relative to drive 100 in the second direction is disclosed (page 5, lines 14-21).

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Further, the spring 107 itself is described as being the only member that allows movement of motor 106 and/or the drive member 110 included thereon in the second direction (page 5, lines 22-24; page 6, lines 8-14). One of skill in the art would recognize that since spring 107 is only described as being moved or caused to compress or otherwise deflect when cartridge 20, more particularly, driven member 39, contacts the drive member 110, drive member 110 and motor 106 as whole, are described as inherently being stationary until the drive member 110 interacts with the driven member 39, which causes deflection (more specifically compression) of the spring 107 to clear drive member 110.

In view of at least the above-identified portions of the originally filed application, the feature of a drive member that is stationary in the second direction until the drive member interacts with the driven member would be reasonably conveyed to one skilled in the art by the originally filed application. Consequently, the rejection of claim 12 under 35 U.S.C. §112, first paragraph, is respectfully requested to be withdrawn.

Claims 18-22 are rejected under 35 U.S.C. §112, first paragraph, due to their dependency on claim 12 in view of the rejection of claim 12 under 35 U.S.C. §112, first paragraph. As described above, claim 1 is believed to meet the written description requirement of 35 U.S.C. §112, first paragraph. Accordingly, claims 18-22 are also believed to satisfy the requirements of 35 U.S.C. §112, first paragraph. Consequently, the Applicant respectfully requests the withdrawal of rejections of claim 18-22 under 35 U.S.C. §112.

35 U.S.C. §102 Rejections**Independent Claim 1**

Claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by Zwettler U.S. Patent No. 6,457,664 ("Zwettler"). In particular, Zwettler fails to disclose a housing having a top and a front adjacent and extending substantially perpendicular to the top where the top defines a driven roller opening that extends to the front as recited in claim 1.

In the Final Office Action, it is argued that "the opening 110 in the top of the housing in Zwettler extends to the front (top portion of the housing in Figs. 3 and 4A)" (pages 6-7).

Amendment

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However, upon reviewing Figures 3 and 4A of Zwettler it becomes apparent that this is not the case. The opening 110 of Zwettler is fully defined by and within the interior of a second major surface 38 of the housing 22. Opening 110 does not extend to the front 32 of housing 22 shown in Figure 2 and illustrated as the top line in Figure 4A (notably, Figure 3, which is referred to in the Final Office Action, refers to the internal components with the housing 22 removed as described at column 5, lines 54-57 and, therefore, does not illustrate the housing as recited in claim 1). Therefore, the opening 110, which provides access to a member to be driven (i.e., the driven member as recited in claim 1), does not extend to any of the surfaces adjacent the second major surface 38, much less to the front 32 of the housing 22.

Of note, the term "front" as used in both the current Application and the cited art consistently refers to the front surface of the housing not merely to a portion of the top positioned toward the front as suggested in the Final Office Action (see e.g., the current application, page 3, lines 27-29, page 6, lines 19-28, and Figure 2; Zwettler, column 4, lines 61-67, Figures 2 and 5). This use of the term "front" is further clarified by amended claim 1, which recites that the front is adjacent and extends "substantially perpendicular to the top." If the front were part of the top as argued in the Final Office Action, it would not be considered "adjacent" the top nor would it extend "substantially perpendicular to the top" as recited in claim 1. In view of the use of "the front" in claim 1, it becomes even more clear that the opening 110 is not disclosed in Zwettler as extending to the front 32 where the front 32 extends from (i.e. is a separate portion of the housing as compared to) the top or second major surface 38 of Zwettler (see Figures 2 and 4A).

In making the above argument, the Final Office Action further states that in viewing the Applicant's drawings, "there is no opening that extends to the outer surface of 26, 29" (page 7). The Applicant respectfully disagrees. Rather, as shown in Figure 3, for example, the opening 22a formed in the top 22 extends to the front 26 of the housing 21. It should be noted that item "29" in Figure 3 is a pivoting door that selectively covers the access opening 28 in the front 26 (present application, page 4, lines 1-2). As such, the opening 22a extends to the front 26 of the

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housing 21 even if the opening 29 is partially closed when not in drive 100 by pivoting door 29, which is an entirely separate member not referred to in claim 1. The extension of opening 22a to the front 26 is further emphasized by the specification. In particular, the specification states that "the opening 22a extends to the front 26" and explains the benefits of the recited configuration of the opening 22a (page 6, lines 19-28). For at least the above-described reasons, Zwettler fails to disclose a housing having a top and a front adjacent the top where the top defines a driven roller opening that extends to the front as recited in claim 1.

Zwettler not only fails to disclose but also fails to otherwise suggest modification to include an opening in the top extending to the front. Rather, Zwettler describes how the drive roller 58 is "axially accessible" such that the "engagement of the drive roller 58 is accomplished by axially directing a rotatably driven, splined drive chuck or motor (not shown) toward the drive roller 58" (column 9, lines 15-20). Since Zwettler teaches direct axial movement of the motor through the opening 110 to contact the drive roller, Zwettler provides no motivation to extend the opening 110 to the front or other surface adjacent the second major surface 38 through which the opening 110 is formed. In fact, Zwettler teaches against radial movement of drive members to engage the driver roller 58 as such movement provides for additional speed and power losses as opposed to axially accessed motor members (column 9, lines 20-32). Consequently, Zwettler fails to teach or otherwise suggest an opening as defined in the top of the housing and extending to the front as recited in claim 1.

For at least these reasons, claim 1 is believed to be allowable over Zwettler. Therefore, Applicant respectfully requests the withdrawal of the rejection of independent claim 1 under 35 U.S.C. §102(b).

It should be noted that the feature added to claim 1 with this Amendment, namely, that the front extends "substantially perpendicular to the top," is fully supported by the originally filed application. For example, the top 22 and front 26 partially define the housing 11, which is described as being generally rectangular shaped (page 3, lines 28-30), and Figure 3 illustrates the front 26 extending substantially perpendicular to the top 22 (see e.g. MPEP 2163 II. A.3 stating

Amendment

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Docket No.: 10333US01

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that an "applicant may show possession of an invention by disclosure of drawings . . . that are sufficiently detailed to show that applicant was in possession of the claimed invention").

Dependent Claims 2, and 13-16

Claims 2 and 13-16 were also rejected under 35 U.S.C §102(b) as being anticipated by Zwettler. Claims 2 and 13-16 each depend from claim 1, which as described above is not disclosed or otherwise suggested by the cited reference. Therefore, claims 2 and 13-16 are also not disclosed or otherwise suggested by the cited reference. Consequently, the withdrawal of the rejections of claims 2 and 13-16 under 35 U.S.C. §102(b) is respectfully requested.

In addition, dependent claims 2 and 13-16 further recite additional subject matter not disclosed or otherwise suggested by Zwettler. For example, claim 13 recites that the driven roller defines a base and the outer surface extends from the base in a first direction, and the driven member extends from the base in the first direction and is concentrically positioned relative to and radially spaced from the outer surface. Such features are not consistent with the driven roller and driven member defined by the Final Office Action to be included in Zwettler. In particular on page 3 of the Final Office Action, the upper portion of drive roller 58 is considered the driven roller of claim 1 and the lower portion of the drive roller 58 is considered the driven member of claim 1. As such, the upper and lower portions of 58 are stacked on one another and form drive roller 58 as a solid piece of material as shown in Figure 6. As such, the top portion of drive roller 58 of Zwettler fails to define a base and an outer surface of the base where the lower portion of the drive roller 58 also extends from such base and is radially spaced from the outer surface of the top portion of the drive roller 58 as would be required given the construction of Zwettler recited in the Final Office Action to include the features recited in claim 13. As a result, claim 13 recites additional subject matter not disclosed or otherwise suggested by Zwettler, which further supports the allowance of claim 13.

In view of the above discussion of claim 13, Zwettler fails to disclose a cavity defined between the outer surface and the driven member as recited in claim 14. Rather, the angled cut-

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SEP 29 2006

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outs 100 of Zwettler are fully formed by the lower portion of drive roller 58 and are not positioned between the outer surface of the top portion of the drive member 58 and the lower portion of the drive member 58. For at least this additional reason, claim 14 recites subject matter not taught or otherwise suggested by the cited references and is believed to be allowable.

Independent Claim 12

Claim 12 was rejected under 35 U.S.C. §102(b) as being anticipated by Kimizuka et al. U.S. Patent No. 4,445,651 ("Kimizuka"). With this Amendment, claim 12 has been amended to clarify the previously presented features thereof. Kimizuka fails to teach or suggest a cartridge including "a driven member maintained entirely within a housing" or "moving the drive member from its first position to its second position by moving the cartridge in the first direction, wherein movement of the drive member from the first position to the second position is in a second direction generally perpendicular to the first direction, and wherein the drive member is stationary in the second direction until the drive member interacts with the driven member" as recited in amended claim 12.

Kimizuka relates to a tape cassette including a casing 21 and a pair of hubs 29a and 29b symmetrically mounted within the casing 21 (column 3, lines 49-51). Circular shaped openings 33a and 33b are formed entirely in the bottom surface of the lower half 21b of the casing 21. The openings 33a and 33b permit the hubs 29a and 29b to extend out of the casing 21 so that they can mate with the driving member (e.g., the drive shafts 42a and 42b), which is external to the cassette (column 4, lines 1-8). Since the hubs 29a and 29b extend out of the casing 21, neither hub 29a nor 29b can be considered to be "a driven member maintained entirely within a housing" as recited by claim 12.

In addition, when the cassette is inserted into the drive, Kimizuka discloses that "the drive shafts 42a and 42b are pressed down by the under surface of the cassette casing 21" lowering the drive shafts against their spring bias until the drive shafts 42a and 42b align with the openings 33a and 33b of the cassette, at which point the drives shafts move back up to their biased position (column 5, lines 14-30). This functionality of Kimizuka contrasts the features

Amendment

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Docket No.: 10333US01

Title: SIDE ACTING DRIVE SHAFT ENGAGEMENT FOR A DATA CARTRIDGE

recited in claim 12. More specifically, the drive shafts 42a and 42b move from a first position to a second position in a direction transverse to the movement of the cartridge upon interaction with “the under surface of the cassette housing.” Accordingly, the drive shafts 42a and 42b move in the second direction (i.e., the direction perpendicular to the first direction in which the cassette is inserted into the drive) well before they interact with gears 31a and 31b. Therefore, the drive shafts 42a and 42b are not “stationary in the second direction until they interact with the driven member” as recited in claim 12.

For at least these reasons, claim 12 is believed to be allowable over Kimizuka. Therefore, Applicant respectfully requests that the rejections under 35 U.S.C §102(b) of independent claim 12 be withdrawn.

Dependent Claims 18-22

Claims 18-22 are also rejected under 35 U.S.C. §102(b) as being anticipated by Kimizuka. Each of claims 18-22 depends from independent claim 12, which as described above is believed to be allowable. Therefore, claims 18-22 are also believed to be allowable and withdrawal of the associated rejections is respectfully requested.

In addition, dependent claims 18-22 each recite additional subject matter not disclosed by Kimizuka. For example, claim 18 recites that the housing includes a top and a front adjacent and extending substantially perpendicular to the top, the top defining an opening that extends to the front, and wherein inserting the cartridge in the first direction causes the drive member to enter the housing through the opening to engage the driven member. Rather, in Kimizuka, the circular shaped openings 33a and 33b are formed entirely within the bottom surface of the cassette casing 21 and such openings 33a and 33b do not extend to any surface or member that is perpendicular to that bottom surface as recited in claim 18. Furthermore, the drive shafts 42a and 42b never enter the housing since gears 31a and 31b extend outside of the casing 21. As such, Kimizuka fails to teach the opening as defined in claim 18 as well as a drive member that enter the housing as recited in claim 18. Therefore, the features of claim 18 further support the allowance of claim 18 and of claims 19 and 20, which further depend from claim 18.

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35 U.S.C. §103 Rejections**Independent Claim 5**

Claim 5 is rejected under 35 U.S.C. §103(a) as being unpatentable over Zwettler in view of Kimizuka. With this Amendment, claim 5 has been amended to clarify features of claim 5 that were previously presented. Amended, independent claim 5 relates to a data storage cartridge having tape driven by a drive belt and drive combination including a data storage cartridge. The data storage cartridge includes a driven member operatively connected to the driven roller, whereby insertion of the cartridge in the drive in a second direction generally perpendicular to the first direction interfaces the inclined engagement surface with the drive member to move the drive member in the first direction as the drive member advances along the inclined engagement surface. Both Zwettler and Kimizuka fail to teach or otherwise suggest such limitations.

As admitted in the Final Office Action, Zwettler does not disclose that the drive member is movable in a first direction by contact with the cartridge or that insertion of the cartridge in the drive in a second direction generally perpendicular to the first direction moves the drive member in the first direction (pages 4-5). Due to the failure of Zwettler to disclose such interaction and movement, Zwettler also fails to teach or suggest an inclined engagement surface of the driven member "whereby insertion of the cartridge in the drive in a second direction generally perpendicular to the first direction, interfaces the inclined engagement surface with the drive member to move the drive member in the first direction as the drive member advances along the inclined engagement surface." Rather, the only inclined surface on the drive roller 58 of Zwettler is configured to axially be engaged by the drive chuck 140 and to subsequently facilitating transfer of rotational movement from the drive chuck 140 to the drive roller 58. As such, Zwettler also does not include the inclined engagement surface whereby insertion of the cartridge in the drive in a second direction interfaces the inclined engagement surface with the drive member to move the drive member in the first direction as the drive member advances along the inclined engagement surface as recited in claim 5.

Amendment

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SEP 29 2006

Kimizuka fails to alter this analysis. As described with respect to claim 12, Kimizuka teaches sliding the drive shafts 42a and 42b along the under surface of the cassette casing 21 until the drive shafts 42a and 42b align with the openings 33a and 33b of the cassette, at which point the drive shafts 42a and 42b move back up to their biased position (column 5, lines 14-30). In this manner, movement of the drive shafts 42a and 42b in a direction perpendicular to the direction of cartridge insertion is effectuated by interfacing with a front edge of the casing and subsequent alignment with openings 33a and 33b not by being advanced along an inclined engagement surface as recited in claim 5.

Further, the hubs 29a and 29b do not define any inclined surfaces that interface with and move the drive shafts 42a and 42b in the second direction. Rather, the only inclined surfaces on hubs 29a and 29b are configured to engage the drive shafts to prevent movement of the 42a and 42b relative to hubs 29a and 29b. Any such inclined surfaces are not oriented or otherwise configured to move the drive shafts 42a and 42b in the second direction as the drive shafts are advanced along the inclined surfaces as recited in claim 5. Therefore, Kimizuka fails to teach or otherwise suggest that “insertion of the cartridge in the drive in a second direction generally perpendicular to the first direction, interfaces the inclined engagement surface with the drive member to move the drive member in the first direction as the drive member advances along the inclined engagement surface” as recited in claim 5.

For at least these reasons, Zwettler and Kimizuka collectively fail to teach or otherwise suggest the limitations of independent claim 5. Therefore, independent claim 5 is believed to be allowable, and Applicant respectfully requests the withdrawal of the rejection under 35 U.S.C. §103(a) of independent claim 5.

Dependent Claims 6-11 and 17

Claims 6 and 17 were also rejected under 35 U.S.C. §103(a) as being unpatentable over Zwettler in view of Kimizuka. Claims 6 and 17 each depend from independent claim 5, which as described above is believed to be allowable over the cited references. Therefore, dependent claims 6 and 17 are also believed to be allowable over the cited references. Accordingly,

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Applicant respectfully requests the rejections of claims 6 and 17 under 35 U.S.C. §103(a) be withdrawn.

Claims 7-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Zwettler in view of Kimizuka et al. as applied to claim 6 above, and further in view of Zuckschwert et al. U.S. Patent No. 3,934,841 ("Zuckschwert"). Each of claims 7-11 depend from independent claim 5, which as described above is believed to be allowable. Zuckschwert fails to alter this analysis. Rather, Zuckschwert relates to a tape drive that receives a cassette such that the winding hubs 6, 7 receive the tape spools within the tape cassette 9 in axial manner (column 2, lines 42-49; Figures 2-4). The axial attachment of the hubs to the cassette fails to teach or otherwise suggest an inclined engagement surface of the tape spools that causes movement of the winding hubs 6, 7 in a direction perpendicular to the direction of cartridge insertion as recited in claim 5 for similar reasons as described with respect to the axial engagement of Zwettler. Therefore, Zuckschwert also fails to teach or otherwise suggest the features of independent claim 5 from which claims 7-11 each depend. Therefore, for at least these reasons, claims 7-11 are also believed to be allowable. Accordingly, withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested.

Claims depending from claim 5, such as claim 11, also define additional patentably distinct subject matter. For instance, Zwettler and Kimizuka both fail to teach a housing having an opening defined in the top surface and extending to the front as recited in claim 11 for similar reasons as described above with respect to claim 1 and claim 18. Zuckschwert fails to alter this analysis. Rather, and openings for the winding hubs 6, 7 of Zuckschwert are formed entirely within a single surface of the tape cassette 9. Therefore, none of the cited references teach the features recited in claim 11. As such, claim 11 further supports the withdrawal of the associated rejection under 35 U.S.C. §103(a).

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CONCLUSION

In view of the above, Applicant respectfully submits that all pending claims 1, 2, and 5-22 are in condition for allowance. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1, 2, and 5-22 are respectfully requested.

The Examiner is invited to contact Applicant's below-listed representative if there are any questions regarding this Amendment and/or to otherwise advance prosecution.

Respectfully submitted,

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